

Claims

[c1] (Currently Amended) I claim a stationary armature self commutating machine comprising: (a) a stationary armature including multiple sets of lap or wave windings connected in series having multiple taps each attached to one stationary commutator segment; (b) a rotor comprised of a coil or a permanent magnet as a means for inducing a steady state magnetic field encompassed by said stationary armature; (c) ~~a stationary commutating assembly comprising a plurality of commutator segments each electrically insulated for the other being fixed to the machine housing~~; and (d) a rotating brush assembly being affixed to said rotor and comprising a plurality of brushes arranged in sub-assemblies held in place by a non-conducting support base ~~as a means for electrical insulation~~; (e) a first and second sub-assembly each consisting of at least two brushes, two copper brush holders[[.]]; (f) one brush keeper or shunt having a curved surface at one end contacting the top of each brush, a counter weight at the ~~other~~ opposite end counteracting the centrifugal forces occasioned by said brushes, and forming a shunt being said two brushes [[.]]; (g) a fulcrum situated at said the copper brush keeper's center of gravity and attached to said non-conducting support base, having equal and opposite moments occasioned by said brushes and counterweight providing a limited predetermined range of yaw within the sub-assembly's plane of rotation; (h) and a retaining spring as a means for containing the brushes within said copper brush holder; (i) a first and second stationary, conductive slip ring as a means for current flow between a power source, stationary

armature and rotating field windings first slip ring electrically connected to said first
rotating sub-assembly's such that current flows through first brush, brush holder, and
brush keeper with said stationary commutator and armature providing electrical continuity
through the second brush holder and brush with some current flow being shunted around
said annature through wires connected to the brush holder of a second rotating brush sub-
assembly of opposite polarity forming a parallel or shunt electrical circuit.

[c2] (Cancelled) The machine in claim 1 wherein rotating field coil wires are connected to said first and second rotating sub-assembly brush holders in an electric circuit parallel to said annature as a means for shunting current flow around said stationary annature windings. Such that current flows through said first slip ring and first rotating sub-assembly's first brush, brush holder, and brush keeper to the second brush holder, brush, commutator and armature, with some current flow being shunted around said annature through wires connected to the brush holder of a second rotating brush sub-assembly of opposite polarity forming a parallel or shunt electrical circuit.

[c3] (Previously Presented) The machine in claim 1 whereas first rotating brush sub-assembly comprised of two copper brush holders being electrically insulated from each other, having a non-conducting brush keeper being curved at one end and held together at the other end via a non-conducting counter-weight with limited range of yaw about a pin forming a fulcrum at its center of gravity affixed to said rotating base such that current flows from said first stationary slip ring, contacting said rotating brush and brush holder through said rotating field winding to said sub-assembly's second brush holder, brush, commutator and armature; whereby a second sub-assembly of opposite polarity being

comprised of a conducting brush keeper and two electrically shunted brush holders such that current flows from said armature and commutator to said sub-assembly's first brush, brush holder and keeper, to said second brush holder, brush and slip ring of opposite polarity forming a series electrical connection between the rotating field and armature windings.

[c4] (Currently Amended) The machine in claim [[2]] 1 whereas said first rotating brush sub-assembly comprised of a non-conducting brush keeper three brushes, and three copper brush holders having the first and second copper brush holders shunted together and electrically insulated from the third such that current flows from said first stationary slip ring, contacting said first rotating brush and brush holder through said rotating field winding in a parallel electrical connection with said stationary commutator and armature; whereby current flows through said rotating field winding to said third brush holder, brush and a third stationary slip ring electrically connected to an outside regulator as a means for separate excitation and regulation; whereby said second sub-assembly of opposite polarity being comprised of a conducting brush keeper and two electrically shunted brush holders such that current flows from said annature and commutator to said sub-assembly's first brush, brush holder and keeper, to said second brush holder, brush and second slip ring of opposite polarity.

[c5] (Cancelled) The machine in claim 1 wherein said rotating brushes electrically contact the outer diameter of the cylindrical stationary commutator and slip rings such that centrifugal forces acting on said brushes forces them in an outward direction away from the surface of the commutating assembly parallel to the plane of rotation, while said brush keepers apply a moment equal and opposite that applied from the centrifugal forces acting

on said brushes as a means for keeping said brushes in contact with said commutator assembly.

[c6] (Cancelled) The machine in claim 1 wherein said rotating brushes electrically contact the inner diameter of the cylindrical stationary commutator and slip rings such that centrifugal forces acting on said brushes forces them in an outward direction towards the inner surface of the commutating assembly parallel to the plane of rotation, while said brush keepers apply a moment equal and opposite that applied from the centrifugal forces acting on said brushes as a means for preventing said brushes from applying excessive pressure at the point of contact on said commutator assembly.

[c7] (Currently Amended) The machine in one of claims 1,[[2,]] 3 & 4 wherein said rotating brush assembly's brushes electrically contact the outer flat or conical surface of the stationary commutator and slip rings arranged in a concentric pattern such that said brushes travel in a direction parallel to the plane of rotation and perpendicular to the point of contact between said stationary commutator and rotating brushes eliminating the need for counter weights.